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REPORT  
OF  
FORTY RECENT CASES  
OF  
CATARACT EXTRACTIONS.

BY  
GEORGE STRAWBRIDGE, M.D.,  
OF PHILADELPHIA.



[Reprinted from the Philadelphia Medical Times of February 19, 1876.]

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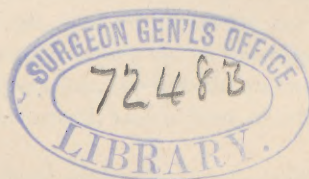
BY  
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*Presented by  
H. E. Wood Jr.*

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# REPORT

OF

## FORTY RECENT CASES OF CATARACT EXTRACTIONS.

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WE appear at the present to have fallen on times in which it has become fashionable to propose at short succeeding intervals new methods for extraction of cataract, most of them slight modifications of previously existing methods; in fact, modifications so insignificant that to call them new would seem to border on absurdity. The query very naturally arises: Have we not at the present time statistics sufficient to enable us to determine with some accuracy certain great principles to guard us in our choice of an operation?

In the first place, what incision has shown itself in the greatest number of respects the best adapted for cataract extraction?

Statistics most favorable point to the Linear incision as giving the highest average of successful results.

Shall the incision be in the cornea or sclerotic, or in both, at their juncture?

Statistics would indicate that the incision should be made so far peripheral as it can be made, without risking involvement of the ciliary bodies, or loss of vitreous humor; while the centre of the incision should as closely as possible form a tangent to the corneal border.

The value of iridectomy in lessening the danger of subsequent inflammatory reaction has also been clearly proven; and this fact alone would exclude from the list of otherwise meritorious methods of operation—a great number—such as the flap operation without iridectomy, the Liebreich operation, the Lebrun operation where iridectomy is but imperfectly performed, and a host of others too numerous to enumerate.

It still remains, as most desirable, the discovery of some method of extracting the capsule with the lens, without materially increasing the danger of the operation.

I think it quite safe to assert that at the present time the Graefe linear extraction method, with some slight modifications, is regarded

as the one combining the greatest number of advantages, and that the measure of success obtained by it compares most favorably with other methods.

In the statistics of forty extraction operations, collected in this paper, it will be noted that four distinct methods of operation have been employed, namely:—

1st Method.

1. Twenty-seven extractions were made by the Graefe linear method, upward section, slightly modified. In these cases the puncture and counter-puncture were made at a distance of 1.5 mm. from the cornea, and 2 mm. below a tangent to the corneal border at its superior margin, but with the centre of the cut a tangent to the cornea, at its superior margin. This lessens materially the risk of vitreous humor loss, by rupture of the zonula at the moment of the lens exit, while at the same time the risk of corneal suppuration is not increased.

2. In opening of the capsule with the cystitome the laceration was made by three incisions, freely separating a triangular piece of the anterior capsule so as to lessen the necessity for secondary operations. In a great many cases this object was successfully attained as this portion of the capsule was removed at the moment of the lens delivery.

3. In a number of cases when the patient showed a quiet demeanor, the fixation forceps was removed after the capsule laceration, and before the lens delivery, so as to reduce to a minimum the pressure exerted on the eyeball at this critical moment.

The entire number of these extractions was successful.

2d Method—The Lebrun operation. Three extractions, with good results.

3d Method. This may be called a modified flap extraction. The puncture and counter-puncture were made at a distance of 0.5 mm. from corneal border, and 3 mm. below a tangent to the superior margin of the corneal border, with centre of cut a tangent to corneal border at its upper margin; the purpose being to still further lessen the risk of involvement of the ciliary border and loss of vitreous humor, while the danger to the cornea was not proportionably increased.

The other steps of the operation remained unchanged. Seven cases were operated on by this method, with a resultant of five successful and two failures.

4th Method. The Liebrich extraction (downward). Three extractions were made by this plan, with successful results.

The following schedule contains the details of these forty extractions:—



## GRAEFEE'S LINEAR, UPWARD, MODIFIED.

No.	Sex.	Age.	General health.	Quality and duration of the cataract.	Complications.	Anæsthetic.	Operation, method and incidents.	Complications during recovery.	Secondary operation.	Ultimate vision.
1	F.	55	.....	Hard ; 1 year's duration.	.....	None	Graefee, linear, upward, modified.	Opaque capsule.	Needle operation.	$V = \frac{20}{70}$
2	M.	50	.....	Hard ; 2 years' duration.	Lens luxation downward and inward (congenital).	None	do. do.	Slight iris prolapse, which was afterwards removed.	.....	$V = \frac{20}{200}$
3	F.	63	.....	Hard ; 1 year's duration.	.....	None	do. do.	.....	.....	$V = \frac{20}{100}$
4	M.	44	.....	Hard ; 2 years' duration.	.....	None	do. do.	Opaque capsule.	Needle operation.	$V = \frac{20}{200}$
5	M.	63	.....	Hard ; 4 years' duration.	Posterior synechia.	None	do. do.	.....	.....	$V = \frac{20}{50}$
6	M.	65	.....	Hard ; 3 years' duration.	.....	None	do. do.	Opaque capsule.	Needle operation.	$V = \frac{20}{40}$
7	M.	65	.....	Hard ; 1 year's duration.	.....	None	do. do.	.....	.....	$V = \frac{20}{40}$
8	F.	50	.....	Soft cortical ; 1 year's duration.	Retinal separation in a myopic eye ; fluid vitreous.	None	do. do.	.....	.....	$V =$ equalled that before the cataract formation.
9	M.	60	.....	Hard ; 2 years' duration.	.....	None	do. do.	Opaque capsule.	Two needle operations at 2 weeks' interval.	$V = \frac{20}{50}$
10	M.	40	.....	Hard ; 1 year's duration.	Medium grade of myopia.	None	do. do.	.....	.....	$V = \frac{20}{50}$
11	F.	62	.....	Hard ; 2 years' duration.	.....	None	do. do. Eye being movable ; some escape of aqueous under conjunctiva.	.....	.....	$V = \frac{20}{40}$
12	F.	62	.....	Hard ; 6 months' duration.	.....	None	Graefee's method modified.	.....	.....	$V = \frac{20}{40}$
13	F.	75	Feeble	Hard ; 1 year's duration.	Lens dislocation and fluid vitreous.	None	do. do. Moderate escape of vitreous.	.....	.....	$V = \frac{10}{200}$
14	F.	72	.....	Hard ; 2 years' duration.	Old iritic adhesions from iridochoroiditis, also blennorrhœa of sac.	None	Graefee's method modified.	Slow closure of wound, also acute inflammation of lachrymal sac 2d day after operation.	.....	$V = \frac{20}{100}$
15	M.	60	.....	Hard ; 1 year's duration.	.....	None	do. do.	.....	.....	$V = \frac{20}{70}$
16	M.	43	.....	Soft cortical.	Caused by powder explosion, rupturing zonula ; powder grains in cornea and lens.	None	do. do. Escape of vitreous ; lens delivered by a spoon.	Slight iritis.	.....	$V = \frac{20}{200}$
17	M.	75	.....	Hard ; 1 year's duration.	.....	None	Graefee's method modified.	Slight iritis.	.....	$V = \frac{20}{200}$
18	M.	82	.....	Hard ; 1 year's duration.	.....	None	do. do.	.....	.....	$V = \frac{20}{70}$
19	F.	74	.....	Hard ; 1 year's duration.	.....	Ether	do. do. Complicated by tearing of conjunctiva and irritability of patient, making it necessary to etherize in middle of operation.	.....	.....	$V = \frac{20}{200}$

GRAEFEE'S LINEAR, UPWARD, MODIFIED—*Continued.*

No.	Sex.	Age.	General health.	Quality and duration of the cataract.	Complications.	Anæsthetic.	Operation, method and incidents.	Complications during recovery.	Secondary operation.	Ultimate vision.
20	M.	55	.....	Hard ; 6 months' duration.	.....	None	Graefe's method modified.	.....	.....	$V = \frac{20}{100}$
21	F.	75	Feeble	Hard ; 2 years' duration.	.....	Ether	do. do.	Hemorrhage into anterior chamber by accidental blow, one week after operation, which was absorbed.	.....	$V = \frac{20}{70}$
22	F.	80	.....	Hard ; 1 year's duration.	.....	None	do. do.	.....	.....	$V = \frac{20}{70}$
23	F.	86	Feeble	Hard ; 5 years' duration.	.....	....	do. do.	Slow healing, and long continuance of conjunctival injection, due to extreme age of patient.	.....	$V = \frac{20}{50}$
24	F.	70	Feeble	Hard ; 2 years' duration.	.....	None	do. do.	.....	.....	$V = \frac{20}{40}$
25	M.	74	.....	Hard ; 4 years' duration. Fluid cortical.	.....	None	do. do. Loss of vitreous; lens delivery by spoon.	Capsulitis due to exposure to sunlight a week after operation.	.....	$V = \frac{20}{200}$
26	M.	84	.....	Hard ; 10 years' duration.	.....	None	Graefe's method modified.	.....	.....	$V = \frac{20}{100}$
27	M.	50	.....	Hard ; 3 years' duration.	Choroiditis.	None	do. do.	Choroiditis, acute.	.....	$V = \frac{20}{200}$

## LEBRUN'S METHOD.

28	M.	64	.....	Hard ; 1 year's duration.	.....	Ether	Lebrun, upward section. Capsule removed by iris forceps.	.....	.....	$V = \frac{20}{40}$
29	F.	69	Feeble	Hard ; 2 years' duration.	Nervous; irritability extreme.	Ether	Lebrun's meth.	Capsulitis.	.....	$V =$ counts fingers at ten feet.
30	F.	72	Feeble	Soft cortical; 1 year's duration.	.....	None	do. do.	Iritis simplex.	.....	$V = \frac{20}{50}$

## MODIFIED FLAP EXTRACTION.

31	F.	70	.....	Hard ; 2 years' standing	Old choroiditis.	None	Modified flap extraction Hemorrhage into anterior chamber during operation	Opaque capsule.	Two needle operations.	$V = \frac{20}{200}$
32	F.	76	.....	Hard ; 1 year's duration.	.....	None	Modified flap. Irido-choroiditis following operation.	Occlusion of pupil with opaque capsule.	One iridectomy.	$V =$ counts fingers at eight feet.
33	M.	67	.....	Hard ; 1 year.	.....	None	Modified flap.	.....	.....	$V = \frac{20}{30}$
34	F.	52	.....	Hard ; 1 year	.....	None	do do. Preliminary iridectomy.	Opaque capsule.	One needle operation.	$V = \frac{20}{200}$



## MODIFIED FLAP EXTRACTION.—Continued.

No.	Sex.	Age.	General health.	Quality and duration of the cataract.	Complications.	Anesthetic.	Operation, method and incidents.	Complications during recovery.	Secondary operation.	Ultimate vision.
35	M.	55	.....	Hard; 1 year.	.....	None	Modified flap.	.....	.....	} $V = \frac{20}{50}$ Light perception.
36	M.	45	.....	Hard; 30 years' duration.	Soft ball; very small.	Ether	do. do. Lens escaped during vomiting.	.....	.....	
37	F.	76	Feeble	Hard; 1 year's duration.	Soft ball.	None	Modified flap. While preparing to lacerate capsule; eyeball being free from instruments; sudden escape of vitreous; emptying of eyeball, and subsequent hemorrhage.	.....	.....	} $V = 0$

## LIEBREICH'S METHOD OF EXTRACTION.

38	M.	30	.....	Traumatic; soft cortical; 4 weeks' duration.	.....	None	Liebreich's method of extract. Upward sect'n; Lens quickly escaping.	Slight iritis.	.....	} $V = \frac{20}{70}$
39	M.	38	.....	Traumatic cataract; 4 days' duration.	.....	None	Liebreich's method.	Iritis.	.....	
40	M.	43	.....	Traumatic cataract; 3 weeks' duration.	.....	None	do. do.	.....	.....	} $V = \frac{20}{100}$ $V = \frac{20}{70}$

## SUMMARY OF RESULTS.

1. Graefe's Extraction Method (modified).	Successes	.....	27
2. Lebrun's " "	Successes	.....	2
" " "	Partial success	.....	1
3. Flap " "	Successes	.....	4
" " "	Partial success	.....	1
" " "	Failures	.....	2
4. Liebreich's " "	Successes	.....	3
Successes	.....	36	= 90 per cent.
Partial successes	.....	2	= 5 "
Failures	.....	2	= 5 "
		40	100

In 1 case,  $V = \frac{20}{30}$ " 6 cases,  $V = \frac{20}{40}$ " 6 "  $V = \frac{20}{50}$ " 7 "  $V = \frac{20}{70}$ In 5 cases,  $V = \frac{20}{100}$ " 10 "  $V = \frac{20}{200}$ " 1 case,  $V = \frac{10}{200}$ " 2 cases,  $V =$  Counts fingers at 8 feet." 1 case  $V =$  Light perception." 1 "  $V = 0$ .

#### ACCIDENTS DURING THE OPERATION.

1. Vitreous humor. Loss occurred in three cases. (In two by the Graefe method ; in one by the flap.)
2. Entire evacuation of contents of eyeball occurred in one case. The patient was a feeble old woman. Previous careful examination led to the conclusion that the cataract was one of hard nucleus and soft cortical substance. Light perception, and projection good—so that I did not apprehend such a termination. The operation was the modified flap, and while preparing to open the capsule, the sudden escape of vitreous took place, although the eyeball was entirely at rest, the fixation forceps having been previously removed, and the cystotome had not been used. Entire evacuation of the eyeball contents occurred, with subsequent severe hemorrhage. Fortunately these cases are rare.
3. Escape of lens during vomiting, produced by ether.
4. Hemorrhage into anterior chamber in one case, which greatly impeded operation.

#### COMPLICATIONS DURING THE HEALING PROCESS.

1. Hemorrhage into anterior chamber in one case (Graefe), three days after the operation, caused by the finger of the patient, while asleep, being rudely thrust against the eyeball ; no serious consequence followed, the blood being quickly absorbed.
2. Prolapse of iris, in one case.
3. Iritis simplex, in two cases.
4. Pupillary membrane, in seven cases.
5. Panophthalmitis, in one case, in which evacuation of the eyeball contents occurred.
6. Purulent capsulitis, in one case (flap).

I am convinced, that, in the Graefe extraction, with some slight modifications, we have the operation combining the greatest number of important and well-settled principles, and increased dexterity in its performance will repay the surgeon and patient much more amply than the incessant striving after other methods, whose greatest merit is their novelty !





